

**CLAIMS:**

1. A method of applying a threaded cap to a threaded neck of a container, the method comprising the steps of:

- 5        placing the cap on the neck of the container;  
         rotating the cap relative to the neck in an opening direction whilst supporting the cap with respect to the neck; and  
         applying the cap to the neck so as to achieve substantial thread engagement.

10

2. A method as claimed in claim 1, wherein the cap is rotated relative to the neck in an opening direction through an angle of at least 360°.

15

3. A method as claimed in claim 1, wherein the cap is rotated relative to the neck in an opening direction through an angle of between 36° and 720°.

4. A method as claimed in claim 1, wherein the cap is applied to the neck by means of an axial force which causes the threads on the cap and the threads on the neck to move past each other and then interengage.

20

5. A method as claimed in claim 1, wherein the cap is applied to the neck by rotation of the cap relative to the neck in a closing direction.

25

6. A method as claimed in claim 5, wherein the cap is drivingly rotated with respect to the neck by rotational drive means in both the opening and closing directions.

30

7. A method as claimed in claim 5, wherein the cap is drivingly rotated by rotational drive means in the closing direction and is rotated against the rotational drive means in the opening direction.

8. An applicator for applying a threaded cap to a threaded neck of a container to achieve substantial thread engagement, the applicator comprising:  
holding means for holding at least one of the cap and the container;  
application means for applying the cap to the neck such that the threads of  
5 the cap and the neck are substantially fully engaged; and  
means for rotating the cap relative to the neck in an opening direction whilst supporting the cap with respect to the neck, such that the threads of the neck and the cap are in alignment prior to application of the cap to the neck.

10 9. An applicator as claimed in claim 8, wherein the application means comprises means for applying an axial force to at least one of the cap and the neck in the direction of the other of the cap and the neck such that the threads on the cap and the threads on the neck move past each other and interengage.

15 10. An applicator as claimed in claim 8, wherein said application means comprises means to rotate the cap relative to the neck in a closing direction.

11. An applicator as claimed in claim 10, wherein said application means comprises rotational drive means.

20 12. An applicator as claimed in claim 11, wherein said means for rotating the cap relative to the neck in an opening direction comprises a second rotational drive means different from said rotational drive means to drivingly rotate the cap relative to the neck in a closing direction, the applicator further comprising  
25 means to selectively activate one of said two rotational drive means.

13. An applicator as claimed in claim 11, wherein said rotational drive means is coupled to said holding means via a gear box, said rotational drive means being adapted to selectively rotate said holding means in one of both an opening  
30 direction and a closing direction.

14. An applicator as claimed in claim 11, wherein said rotational drive means is coupled to said holding means via clutch means, said holding means being adapted to be rotated against said clutch means in a direction opposite to the direction of rotation of said rotational drive means.

5

15. An applicator as claimed in claim 14, wherein engagement means are provided to engage said holding means and rotate said holding means in an opening direction against the direction of rotation of said rotational drive means.

10

16. An applicator as claimed in claim 15, wherein said engagement means comprises a first formation which positively engages with a second formation provided on said holding means, relative movement between said first and second formations causing said cap to rotate with respect to the neck in an opening direction.

15

17. An applicator as claimed in claim 15, wherein said engagement means comprises a first surface which frictionally engages a second surface provided on said holding means, relative movement between said first and second surfaces causing said cap to rotate with respect to the neck in an opening direction.

20

18. An applicator as claimed in claim 15, wherein the duration of engagement between said engagement means and said holding means causes said cap to rotate with respect to the neck through an angle of at least 360°.

25

19. An applicator as claimed in claim 15, wherein the duration of engagement between said engagement means and said holding means causes said cap to rotate with respect to the neck through an angle of between 36° and 720°.

30

20. An applicator as claimed in claim 11 comprising a plurality of holding means, each for holding at least one of a respective cap and container combination, said rotational drive means being common to each of said plurality of holding means.

21. An applicator as claimed in claim 20, wherein said rotational drive means is coupled to each of said plurality of holding means via respective clutch means such that one or more of said holding means may be rotated against said  
5 respective clutch means in a direction opposite to the direction of rotation of said rotational drive means while the remainder of the plurality of holding means are rotated in the direction of said rotational drive means.

22. An applicator as claimed in claim 21, wherein said engagement means is  
10 common to said plurality of holding means.

23. A reverse drive mechanism for use with an applicator for applying a threaded cap to a threaded neck of a container to achieve substantial thread engagement, the applicator comprising:

15 holding means for holding at least one of the cap and the container;  
rotational drive means to rotate the cap relative to the neck in a closing direction such that the threads of the cap and the neck are substantially fully engaged; and

clutch means interposed between said rotational drive means and said  
20 holding means such that the holding means is adapted to be rotated against said clutch means in a direction opposite to the direction of rotation of said rotational drive means, the reverse drive mechanism comprising engagement means to engage said holding means and rotate said holding means in an opening direction against the direction of rotation of said rotational drive means whilst  
25 supporting the cap with respect to the neck such that the threads on the neck and the cap are in alignment prior to said rotational drive means rotating the cap relative to the neck in a closing direction.

24. A reverse drive mechanism as claimed in claim 23, wherein said  
30 engagement means comprises a first formation which positively engages with a second formation provided on said holding means, relative movement between

said first and second formations causing said cap to rotate with respect to the neck in an opening direction.

25. A reverse drive mechanism as claimed in claim 23, wherein said  
5 engagement means comprises a first surface which frictionally engages a second surface provided on said holding means, relative movement between said first and second surfaces causing said cap to rotate with respect to the neck in an opening direction.
- 10 26. A reverse drive mechanism as claimed in claim 23, wherein the duration of engagement between said engagement means and said holding means causes said cap to rotate with respect to the neck through an angle of at least  $360^{\circ}$ .
- 15 27. A reverse drive mechanism as claimed in claim 23, wherein the duration of engagement between said engagement means and said holding means causes said cap to rotate with respect to the neck through an angle of between  $36^{\circ}$  and  $720^{\circ}$ .